

APPENDIX F

**ACCOUNTING RELATIONSHIPS BETWEEN KEY OUTCOME
VARIABLES**

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This presentation of the accounting relationships follows a formulation used by RAND in their analysis plan for the SSI child evaluation in some ways, but simplifies it in others (RAND, 1998). Their formulation allows for age-cohort specific application, allowance and continuation rates, which is a useful extension if data are available to support age-cohort models.

During any period, program benefits are paid to recipients who applied and received their allowances at various times in the past and who continue to receive benefits in the current period. Thus, we may write benefit payments in period t , B_t , as:

$$\text{Equation 1: } B_t = \sum_{s < t} N_s a_s r_s g_{ts} b_{ts},$$

where: N_s is the number of individuals who are “at-risk” for first entry into the program in period s (those who have never been recipients); a_s is the proportion who apply for benefits in period s ; r_s is the allowance rate for those who apply in period s ; g_{ts} is the proportion of allowed applicants from period s who continue to receive benefits in period t ; and b_{ts} is mean benefit payments to allowed applicants from period s who continue to receive benefits in period t . The proportion who apply, the allowance rate, the continuation rate, and mean benefits all potentially depend on the policy regime and the economic environment in period s , as well as on the demographic composition of the at-risk population in period s . The continuation rate also may depend on changes in the policy and economic environment between periods s and t .

The following are closely related equations for the caseload, C_t : the number of applications, A_t , the number of allowances, R_t , and the number of terminations, T_t , in period t :

$$\text{Equation 2: } C_t = \sum_{s < t} N_s a_s r_s g_{ts};$$

$$\text{Equation 3: } A_t = N_t a_t;$$

$$\text{Equation 4: } R_t = N_t a_t r_t; \text{ and}$$

$$\text{Equation 5: } T_t = \sum_{s < t} N_s a_s r_s (g_{ts} - g_{t-1s}).$$

We have not distinguished between temporary and permanent benefit terminations. This is an important simplification, but it should be kept in mind that those first allowed in s who are recipients in t need not have been recipients for all intermediate periods. We also have not specified the time period. A month is the shortest period of interest because eligibility is determined, and benefits are paid, on a monthly basis. Data issues might make longer periods more appropriate in some analyses; this will have an impact on the definitions and values of the variables above, as well as on the observed dynamics of the process.